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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,273	11/20/2001	William Robert Hanson	035451-0145 (3682.Palm)	9592

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EXAMINER

SAWHNEY, HARGOBIND S

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 10/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/989,273

Applicant(s)

HANSON ET AL. *u*

Examiner

Hargobind S Sawhney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6-19, 22 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (U.S. Patent No. 5,982,092) in view of Umemoto et al. (U.S. Patent No. 6,366,409 B1) .

Regarding claims 1-4, 6-9, 17-19, 22 and 24-27, Chen (U.S. Patent No. 5,982,092) discloses a lighting system for a display (Figure 3) comprising:

- a light source 40 providing light having wavelength in a spectrum not visible to the human eyes (Figure 3, column 1, lines 10-14, and column 3, lines 10-14);
- a reflective layer 50- also considered herewith as a light converter - having a fluorescent surface reflecting the invisible light from the light source 40, and converting the invisible light into visible light to human eyes (Figure 3, column 3, lines 5-7 and 11-20);
- the light source 3 including a light guide 10 (Figure 3, column 2, line 54);

- the reflective layer 50 inherently provided with metallized coating well known in the art;
- the light source including a light emitting diode (LED) 40 (Figure 3, column 3, lines 11-13);
- the light emitting diode 40 emitting ultraviolet light (Figure 3, column 1, lines 9-12, and column 3, lines 34-38)

Chen further teaches that the light source disclosed by him, and comprising the above-indicated feature, could be utilized as a light source for a liquid crystal display (LCD) (Figure 1 and abstract). However, Chan does not teach specific features and position of a LCD as recited in claims 1,3 and 4.

On the other hand, Umemoto et al. (U.S. Patent No. 6,366,409 B1) discloses a planer light source 11 (Figures 3 and 4) with a display layer 3 (Figure 3, column 15, lines 5-7) inherently having its pixels altered with an application of electric charge. In addition, Umemoto teaches alternate positions – below or above - the planer light source 11 (Figures 3 and 4) respective to the display layer 3.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to combine lighting system of Chen with the display layer - LCD- and it positioning as taught by Umemoto providing for the benefits and advantage of providing a display system with a lighting system having long operational life, energy efficiency and steady illumination.

Regarding claims 10-15, Chen (U.S. Patent No. 5,982,092) Chen discloses a light source 40 (LED) emitting light in visible to the human eyes, a reflective layer 50

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having a fluorescent surface reflecting the invisible light, and converting it to the light visible to the human eye.

Chen further teaching a reflective layer 50 inherently having a metallized surface; and the light source 40 providing ultraviolet (UV) light.

Umemoto et al. (U.S. Patent No. 6,366,409 B1) discloses a liquid crystal display (LCD) 3 with display layer inherently having its pixels.

Neither in combination nor individually Chen (U.S. Patent No. 5,982,092) and Umemoto et al. (U.S. Patent No. 6,366,409 B1) teaches a light source 40 providing infrared (IR) light, use of LEDs emitting infrared light for display system. It would be have been obvious to one of ordinary skill in the art at the time of the invention to make use of LEDs emitting IR light instead of UV light emitting diodes, since its use for a display system is known in the art.

Regarding Claim 16, it has been held that a recitation with respect to the manner in which a claim apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitation.

Finally, it would have been obvious to one of ordinary skill in the art at the time of the invention to make use of the teachings Chen and Umemoto for meeting the method limitations of Claims 10-16.

3. Claims 5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (U.S. Patent No. 5,982,092) in view of Umemoto et al. (U.S. Patent No. 6,366,409 B1) as applied to claims 1 and 17 respectively above, and further in view of Gasparaitis et al. (U.S. Patent No. 4,644,925).

Neither in combination nor individually Chen (U.S. Patent No. 5,982,092) and Umemoto et al. (U.S. Patent No. 6,366,409 B1) teaches a lighting system for display the reflective layer including phosphorescent coating on its substrate.

On the other hand, Gasparaitis discloses a liquid display assembly 80 (Figure 4, column 3, line 60) comprising a phosphorescent coating 50 on the substrate 82 (Figure 3, column 4, lines 56-59).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to further modify lighting system of Chen in view of Umemoto by providing a phosphorescent coated substrate as taught by Gasparaitis for the benefits and advantage of providing a display system with a supplemental lighting source for even distribution of light intensity.

4. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (U.S. Patent No. 5,982,092) in view of Umemoto et al. (U.S. Patent No. 6,366,409 B1) as applied to claim 20 above, and further in view of Takaeuchi (Japanese Patent No. JP 06-172665).

Neither in combination nor individually Chen (U.S. Patent No. 5,982,092) and Umemoto et al. (U.S. Patent No. 6,366,409 B1) teaches a lighting system for display the reflective layer including phosphorescent coating together with metallized coating on its substrate.

On the other hand, Takaeuchi (Japanese Patent No. JP 06-172665) discloses a binder resin for an electroluminescent lamp (EL) comprising a metallized

phosphorescent material applied on a transparent substrate 4 (Figure 1, English translated abstract).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to further modify lighting system of Chen in view Umemoto by providing a metallized phosphorescent material coated substrate as taught by Takaeuchi for the benefits and advantage of providing a substrate coating having resistance to scratching abrasion, chemicals and stains.

5. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (U.S. Patent No. 5,982,092) in view of Umemoto et al. (U.S. Patent No. 6,366,409 B1) as applied to claim 22 above, and further in view of Toray (Japanese Patent No. JP2000-138095 A).

Neither in combination nor individually Chen (U.S. Patent No. 5,982,092) and Umemoto et al. (U.S. Patent No. 6,366,409 B1) teaches a lighting system for display the reflective layer including fluorescent coating together with metallized coating on its substrate.

On the other hand, Toray (Japanese Patent No. JP2000-138095 A) discloses a light emitting element for a flat panel display comprising a metallized fluorescent material emitting light , and being arranged between electrodes (Figures 1-3 and English translated abstract).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to further modify lighting system of Chen in view Umemoto by providing a metallized fluorescent material coated substrate as taught by Toray for the benefits and

advantage of providing a substrate coating having resistance to scratching abrasion, chemicals and stains.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shaw et al. (US Patent 6,419,372 B1), Levinson et al. (US Patent 6,299,338 B1), Hjaltason (US Patent 5,414,947 B1) and Hart (US Patent 5,144,416) each discloses a display combined with a lighting system comprising some of the features claimed by the applicant.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hargobind S Sawhney whose telephone number is 703-306-5909. The examiner can normally be reached on 6:15 - 2:45.

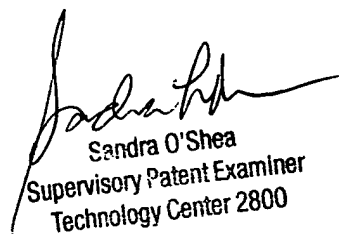
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 703-305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-83037724 for regular communications and 703-308-8303 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2956.

HSS

9/27/2002



Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800